FORM 1 BIO SCHEME

1 a) objective lens- magnification of the objective/image ( accept – magnification alone)

 b) Diaphragm – regulates /adjusts /controls amount of light (falling on the object on microscope);

2. a) Ribosomes – protein synthesis

 b) Lysosomes – Breakdown worn out cells/organelles/food materials ;

3. a) - In diffusion molecules move/along concentration gradient from a highly concentrated region

 to a lowly concentrated region while in active transport molecules move/against concentration gradient from a lowly concentrated region to a highly concentrated region;

* No energy is required in diffusion while energy is required in active transport;
* In diffusion no carrier molecules are required while in active transport, carrier molecules are required;
* 4. a) the red cell was placed in a hypertonic solution; it lost water by osmosis; and remained crenated;

Cell wall

Cell membrane

Nucleus

Sap vacuole

Cytoplasm

b)

End of plasmolysis

 Start of plasmolysis

5. - Presence of cell wall; which is rigid/does not stretch/tough;

6. - Secretion of substances;/hormones/enzymes/ polysaccharides /clycoproteins/synthesized

 proteins/carbohydrates;

Packaging of carbohydrates and proteins/glycoproteins/synthesized materals;

Modification of carbohydrates and proteins/formation of glycoproteins;

Transport of carbohydrates/proteins/ glycoprotein/lipids;

Production of lysosmes;

7. Mitochondrion;

 8 a) A- Eye piece;

 B- Coarse adjustment knob;

 C- Fine adjustment knob;

 D- arm;

 E – MIRROR;

 b) E – regulates the amount of light passing through condenser to illuminate the specimen;

 F- objective lens – brings image into focus and magnifies it;

 c) Magnification = magnification of X magnification of the

 the eye piece lens objective lens

10. a) Smooth endoplasmic reticulum;

 b) Lysosomes;

 c) Nucleus;

 d) Centrioles;

11. i) Entomology;

 ii) Ecology;

12 Cytology;

13. i) Pooter - for sucking small animals from rock surfaces or banks of trees;

 ii) For catching flying insects;

14 a) *Genus;*

 b) The genus name should begin with Capital letter and species name with a small letter;

should be printed in italics or when handwritten should be underlined as separate words;

should be Latinized i.e made to sound like latin words;

15.

|  |  |
| --- | --- |
|  Plant cells | Animal cells |
|  1,. Have cell wall made of cellulose | Have no cell wall; |
| 2. have vacuoles filled with cell – sap | Rarely have vacuoles, if they do, then they are temporary and small. |
| 3. generally have a definite shape | Have no definite shape;  |
| 4. green plants have cells with chloroplasts | Chloroplasts do not occur in animals cells. |

11. - Reproduction;

* Growth, repair and replacement;
* Nutrition;
* Respond to stimuli;
* They move
* They respire;

 They excrete;

 18 a) Kingdom plantae;

 b) Kingdom Fungi;

 c) Kingdom Protoctista;

 d) Kingdom Monera;

19) i) For light to pass through easily;

 ii) To make the features more clear and distinguishable;

 iii) For cells to remain turgid

20a) The science of classification;

b) A group of organisms that can freely/ naturally interbreed to give a fertile (viable ) off spring;

21Magnify/enlarge image of objects/specimen;

To improve the resolving power/ show fine details of structures that are very close to

appear separate;

21. A cell is the basic structural; and functional unit of a living organism / thing;

(b) (i) Entomology: study of insects; (1mk)

(ii) Genetics: study of inheritance; and variation.